

WHAT IS CLAIMED IS:

- 1 1. A device for use with a metering device for measuring analyte
2 levels, said device comprising:
 - 3 a cartridge;
 - 4 a plurality of analyte detecting members mounted on said cartridge.
- 1 2. The device of claim 1 wherein said cartridge does not include any
2 penetrating members.
- 1 3. The device of claim 1 wherein said cartridge has a radial disc
2 shape.
- 1 4. The device of claim 1 wherein said cartridge is sized to fit within
2 said metering device.
- 1 5. The device of claim 1 wherein said analyte detecting members
2 wherein only a working electrode is covered with a glucose oxidase.
- 1 6. The device of claim 1 wherein said analyte detecting members
2 include working and counter electrodes formed from one of the following: Ag or Ag/Cl.
- 1 7. The device of claim 1 wherein said analyte detecting members
2 have different sensitivity ranges enhancing the overall range of sensitivity of an array of
3 such members when used on a single fluid sample.
- 1 8. The device of claim 1 wherein said analyte detecting members can
2 provide their analysis requiring no more than one of the following volumes: 300, 200,
3 100, 60, 50, 30, 20, 15, 10, and 5 nanoliters.
- 1 9. The device of claim 1 wherein said analyte detecting member
2 comprises a working electrode, a reference electrode, and counter electrode, wherein only
3 the working electrode is covered with a redox mediator.
- 1 10. The device of claim 1 said analyte detecting members use an
2 amperometric measurement technique.

1 11. The device of claim 1 further comprising a mesh configured fluid
2 spreader positioned over said analyte detecting member.

1 12. The device of claim 1 further comprising a hydrophilic membrane
2 positioned over said analyte detecting member. 4.53 cubic centimeters

1 13. The device of claim 1 wherein the cartridge has a higher density of
2 analyte detecting members than 4.53 cubic centimeters divided by 17 per single analyte
3 detecting member..

1 14. The device of claim 1 wherein the cartridge has a higher density of
2 analyte detecting members than 4.53 cubic centimeters divided by 20 per single analyte
3 detecting member.

1 15. The device of claim 1 wherein the cartridge has a higher density of
2 analyte detecting members than 4.53 cubic centimeters divided by 25 per single analyte
3 detecting member.

1 16. The device of claim 1 wherein the cartridge has a higher density of
2 analyte detecting members than 4.53 cubic centimeters divided by 50 per single analyte
3 detecting member.

1 17. A device for use with a body fluid sampling device for extracting
2 bodily fluid from an anatomical feature, said device comprising:
3 a cartridge having a plurality of sample chambers;
4 a plurality of analyte detecting members;
5 wherein at least one of said analyte detecting members forms a portion of
6 one wall of one of said plurality of sample chambers.

1 18. The device of claim 17 wherein said cartridge comprises a
2 connector disc and an analyte detecting member disc.

1 19. A device for use with a body fluid sampling device for extracting
2 bodily fluid from an anatomical feature, said device comprising:
3 a cartridge having a plurality of sample chambers;

4 a plurality of penetrating members each at least partially contained in said
5 cavities of the single cartridge wherein the penetrating members are slidably movable to
6 extend outward from openings on said cartridge to penetrate tissue;
7 a plurality of analyte detecting members;
8 wherein said chamber is positioned substantially adjacent an outer
9 periphery of said cartridge;
10 at least one opening in one of said sample chambers leading fluid along a
11 fluid path towards one of said analyte detecting members.

1 20. The device of claim 19 wherein said fluid path contains a channel
2 sized to hold no more than 1 microliter.

1 21. A method for determining a concentration of an analyte in body
2 fluid, comprising:
3 collecting a sample of body fluid of about 500 nL or less;
4 covering an electrochemical sensor with at least a portion of the sample;
5 determining the concentration of the analyte in the sample using a
6 potentiometric technique.

1 22. A device comprising:
2 a plurality of analyte detecting members defining an array;
3 wherein at least two of said members have different sensitivity ranges
4 enhancing the overall range of sensitivity of the array when used on a sample fluid.

1 23. A device comprising:
2 a single cartridge having a plurality of cavities;
3 a plurality of analyte detecting members defining an analyte array;
4 wherein at least two of said sensors have different sensitivity ranges
5 enhancing the overall range of sensitivity of the array when used on a sample fluid;
6 wherein said plurality of cavities each has one analyte array.

1 24. A system comprising:
2 an electric penetrating member driver;
3 a single cartridge having a plurality of cavities;
4 a plurality of penetrating members housed in said cavities and individually
5 movable by said driver to penetrate tissue;

6 a plurality of analyte detecting members defining an analyte array;
7 wherein at least two of said sensors have different sensitivity ranges
8 enhancing the overall range of sensitivity of the array when used on a sample fluid;
9 wherein said plurality of cavities each has one analyte array.